

# A Vision for Prostate Cancer

Current methods for prostate cancer screening have drawbacks. Rectal exams only catch relatively large, posterior tumors. Levels of prostate-sensitive antigen (PSA) are a controversial tool—many men with high PSA levels never develop the disease; conversely, low levels of PSA do not mean a cancer-free guarantee. Needle biopsies provide the best evidence for cancer, but until now, doctors had no choice but to go in blindly with a needle, taking random samples and risking damage to sensitive nerves and ducts.

Over the last 10 years, a team of NIH scientists—including Peter Choyke, M.D., Chief of CCR's

Molecular Imaging Program, Bradford Wood, M.D., Director of the NIH Center for Interventional Oncology, and Peter Pinto, M.D., Staff Clinician, CCR's Urologic Oncology Branch—have developed the technology to perform visually guided needle biopsies for prostate cancer. First they demonstrated that magnetic resonance imaging (MRI) has the power to detect prostate tumors. Then, they developed techniques to fuse images taken with conventional MRI with real-time ultrasound scans, enabling urologists to guide their ultrasound biopsies using the superior resolution of MRI. This technology has now been commercialized by Invivo (a

subsidiary of Philips Medical Systems) and was unveiled as UroNav at the 2013 annual meeting of the American Urological Society.

The team that developed UroNav is not resting on their laurels. They are looking beyond diagnosis to improve treatment. “Prostate cancer has been treated for over a century by removing the whole prostate,” said Pinto. “Image-guided focal therapy for prostate cancer can avoid the side effects of whole gland therapy, erectile dysfunction, and urinary incontinence.” They have already conducted safety and feasibility studies, and are beginning a phase 2 trial for efficacy.